

A Guide to Installing  
**YELLOW DOG LINUX 5.0**  
for PLAYSTATION®3

by Terra Soft Solutions, Inc.  
Loveland, Colorado

## **A Guide to Installing Yellow Dog Linux v5.0 on a PS3**

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*Many thanks to the Terra Soft, Enlightenment, and Sony engineers for making Yellow Dog Linux v5.0 for the Sony Computer Entertainment PLAYSTATION®3 a reality ... and so very thankful we didn't have to sleep in a parking lot to get our first PS3 :)*

## INTRODUCTION

*Thank you for choosing Yellow Dog Linux!*

When Sony Computer Entertainment designed the PLAYSTATION®3 (PS3™), it was fully intended that you, a PS3 owner could play games, watch movies, view photos, listen to music, and run a full-featured Linux operating system that transforms your PS3 into a home computer.

Yellow Dog Linux for PS3 combines a simple to use graphical installer with leading-edge components and a foundation of must-have home, office, and server applications. Everything you need to browse the web, check and compose email, do your school homework or take your office work home is included with more than 2000 packages on the Install DVD.

And what's more, Yellow Dog Linux is 100% open-source, meaning the source code to every component is freely available so that if you desire to improve one or more applications, you may do so at your choosing. This contribution back to the open-source community leads to the improvement of Linux software worldwide.

It's a system that has worked for more than 15 years, continuing to grow in both quality and users every year. Linux is collectively one of the top operating systems in use worldwide. Terra Soft is proud to be a part of this with a Fedora Core, RPM based Yellow Dog Linux.

### **This Guide to Installation**

This Guide to Installation is written specifically for the Sony Computer Entertainment PLAYSTATION®3. This Guide does not offer instructions specific to other computers (ie: Apple Power Macintosh) supported by Yellow Dog Linux. Installation instructions for other computers are available from Terra Soft's website.

Refer to [www.terrasoftsolutions.com/support/](http://www.terrasoftsolutions.com/support/) for updates, issues specific with unique computer configurations, and engineering notes.

### **Where is Yellow Dog Linux Installed?**

The drive installed in your PS3 ships with just one large *partition*, a logical division of the drive into unique sectors for the organization and protection of data.

Before you install Yellow Dog Linux, you will use the PS3 GameOS to split the drive into 2 major partitions: one for saving game data, music, and photos; the other for Yellow Dog Linux.

In this respect, both the GameOS and Yellow Dog Linux maintain their own unique volumes on which to store data.

### **Two Operating Systems on my PS3?**

Following the installation of Yellow Dog Linux on your PS3, there will be 2 operating systems: the *GameOS* and *Yellow Dog Linux* (YDL).

The GameOS is the operating system that ships pre-installed on PS3. It is also referred to as a *hypervisor*, an operating system that provides a channel of communication between the outside world (you, your game controller, the monitor) and the built-in hardware (CPU, motherboard, RAM, hard drive, and I/O ports).

When you use the on-screen menus, play a game, watch a movie, or listen to music, you are doing so through the GameOS. Yellow Dog Linux runs on top of the GameOS which provides an important communication between Linux and the hardware.

Even if this sounds a bit technical, it is important as the GameOS provides a layer of continuity for Linux, making the development and maintenance of Linux for PS3 a more predictable process. This means you will enjoy a higher quality, higher performance Linux operating system.

*We hope you enjoy Yellow Dog Linux for PS3 and we look forward to receiving your feedback.*

*Please visit us at [www.terrasoftsolutions.com](http://www.terrasoftsolutions.com)*

## PREPARATION

### The Yellow Dog Linux Install DVD

Either remove the Install DVD from the Yellow Dog Linux (YDL) package or prepare the Install DVD-R via a download and burn.

YDL may be purchased from the Terra Soft Store:

[www.terrasoftsolutions.com/store/](http://www.terrasoftsolutions.com/store/)

... or via select retail stores worldwide (see Terra Soft's website for details). YDL may also be downloaded via YDL.net Enhanced accounts which provide a dedicated server for early access and Installation Support or from the public FTP mirrors (made available two weeks after the physical product ships).

### PS3 Preparation

There are just a few things you must do with your PS3 before it is prepared to install Yellow Dog Linux.

1. Attach the game controller, a USB keyboard and mouse to your PS3. The game controller will be used to conduct all GameOS functions. The USB keyboard and mouse will be used once you enter the YDL installer.
2. Power on your PS3. If this is the first time you have used your PS3, you will be prompted to Select a language, Select a time zone, Set the time & date, and Set the username (more easily done with a USB keyboard).
3. Select:  
Settings ==> System Settings ==> Format Utility ==>  
Format Hard Disk ==> Yes ==> Yes
4. Select a partition setting for the hard disk:  
Custom
5. You will be presented with option to "Allot 10GB to the Other OS" or "Allot 10GB to the PS3 System." If your PS3 has a 20GB drive and you select 10GB for the PS3 System, this leaves roughly 6.5GB for Linux (which is not enough for a full install, but ample for the default YDL install).
6. Your PS3 will now format its internal drive.
7. When complete, press "X" on the controller to EXIT which will cause your PS3 to reboot.

### Prepare a Memory Card or USB Drive

You will require a memory card (Memory Stick™, SD card, or CompactFlash®), USB memory device (*jump* or *thumb* drive), USB attached hard drive, or empty optical media (CD-R/W, DVD-R/W, BD-R/E) to facilitate transfer of the *bootloader installer* and *bootloader* from a PC or Mac to your PS3.

1. Locate a memory card, USB drive, or optical media with at least 10MB free space.
2. On this memory card, USB drive, or optical media create a directory called "ps3".
3. Inside the *ps3* directory, create a sub-directory called "otheros".

### Download & Save the *bootloader installer*

Download and install the *bootloader installer*, a piece of software that installs the *bootloader* (see "bootloader" below).

1. Download the *bootloader installer* from Sony's website:

[www.playstation.com/ps3-openplatform/](http://www.playstation.com/ps3-openplatform/)

2. Save the *bootloader installer* in the */ps3/otheros* directory on your memory card, USB drive, or optical media as "otheros.self".

### Download & Save the *bootloader*

Download and install the *bootloader* "kboot", a piece of software that allows the GameOS to transfer authority to Yellow Dog Linux.

1. Download the *bootloader* from Terra Soft's website:

[www.terrasoftsolutions.com/support/installation/ps3/otheros.bld](http://www.terrasoftsolutions.com/support/installation/ps3/otheros.bld)

2. Save the *bootloader* in the */ps3/otheros* directory as "otheros.bld".
3. Unmount and remove the memory card or USB drive or eject the optical media from your PC/Mac.

### Transfer *bootloader installer* and *bootloader* to the PS3

Before you install Yellow Dog Linux, you must transfer the *bootloader installer* and *bootloader* to your PS3. *Do not turn off the power nor remove the recording medium during the installation.* Interrupting the installation process may cause damage.

1. Insert the memory card, USB drive, or optical media into the PS3.
2. From the GameOS menu, select:  
Settings ==> System Settings ==> Install Other OS
3. Your PS3 will now scan the memory card, USB drive, or optical media for the bootloader installer and bootloader.
4. Confirm discovery of `"/ps3/otheros/otheros.self"`.
5. Press "X" on the controller to start the installation. The PS3 screen blanks while pulling files from the memory stick, USB drive, or optical media.
6. You will now be prompted with:  
"Other OS Installer Version x.y.z" ==> Start  
... and then:  
Controller check ==> License Agreement ==> Install Completed  
... and then:  
"Back"
7. You must now select "Other OS" in order to install YDL:  
Settings ==> System Settings ==> Default System ==> Other OS
8. Power off your PS3.

### Returning to the GameOS

Your PS3 will now boot to YDL each time it powers on unless you command `kboot` (the bootloader) to again boot the GameOS (see BOOTING GAMEOS, below).

To return to the GameOS, at the `kboot` prompt, enter:

```
boot-game-os [ENTER]
```

The PLAYSTATION®3 may be forced to return to the GameOS by holding the power button for about 5 seconds at power on. Doing this resets your PS3 to factory default. To return to Yellow Dog Linux, you will need to perform steps 7 and 8, above.

## INSTALLATION

1. Power on your PS3.
2. Insert the YDL Install DVD into the PS3.
3. The bootloader *kboot* is displayed on-screen.
4. Press TAB repeatedly to cycle the 4 options: *install*, *installtext*, *rescue*, and *rescuetxt*. Press ENTER to select the desired option. If you do nothing for 10 seconds, the bootloader will default to *install*.  
  
When installing YDL, you will need a monitor or television capable of at least 720p in order to perform a graphical install. If your monitor does not have this capability, or running "install" at the `kboot` prompt does not work with your monitor or television, "installtext" may be used. This will force the YDL 5 installer to run in a low-resolution text mode.
5. Enter Anaconda (the Yellow Dog Linux installer) and move forward with the installation of Linux, as guided on-screen and in the next section.

### Language & Keyboard Selection

Select your preferred Language and Keyboard configurations.

### Partition Drive

Partitioning a drive creates *logical* (as compared to physical) sections on your drive, each serving the purpose of organizing and protecting data.

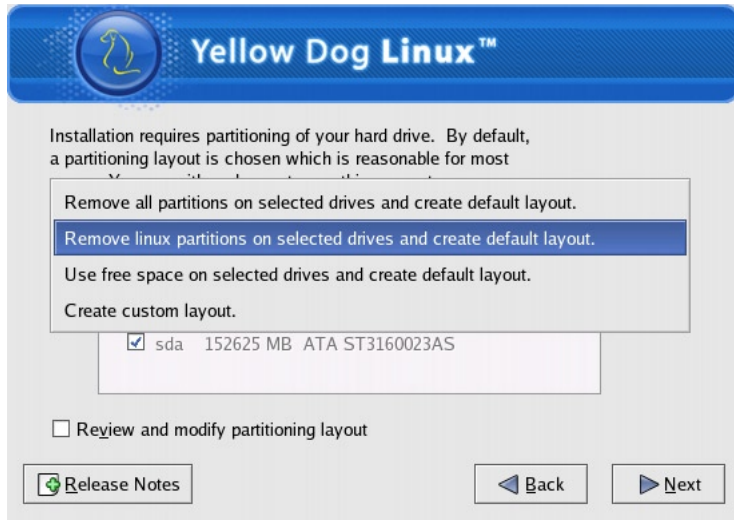
**NOTE:** *If this is the first time installing Linux on your PS3, you will be warned, "The partition table on this device sda was unreadable ..." This is normal. Go ahead and select "Yes" to proceed.*

You may either allow the Installer to create the partitions for you by selecting *Automatic Partitioning*, or conduct this effort manually via *Disk Druid*.

If you elect to use the Automatic Partitioning feature, you may choose from one of three schemes:

*Remove all Linux partitions:* this will delete and then replace only existing Linux partitions. Please note that if you have already installed Linux on your PS3, this procedure will **DESTROY ALL EXISTING LINUX DATA**. The GameOS and game data will not be harmed.

*Remove all partitions:* on a PS3 (as compared to a Mac) this will produce the same result as "Remove all Linux partitions" (above) as the GameOS cannot be affected by the Linux installer.



*Keep all partitions and use existing free space:* if you have never installed Linux on your PS3, this will generate the same result as "Remove all partitions" (above).

The use of Disk Druid is for advanced Linux users who desire to customize the partitioning of their drive. If you are new to Linux, we recommend you use the Automatic Partition tool discussed earlier in this section.

If you elect to build your partitions manually, you should create the following:

*swap* - used to temporarily store data no longer held in RAM. Swap should be no less than 512MB.

*home* - by creating a `/home` dir, you may re-install YDL and preserve your home directory. This may be any size you desire, but likely at least 1 GB.

*/* - contains everything else (`/etc`, `/sbin`, `/var`, etc.) and should be at least 8GB for a full install, but no smaller than 3GB for the default YDL install.

## Root Password

Choose a password that is at least 8 characters, both letters and numbers and is not based on a dictionary word. *Lower and upper case letters are unique.* Do not use your birthday, your child's name spelled backward, nor the name of your spouse followed by the year you were married. *The security of your computer is only as strong as your passwords.* Do not forget this password. Only login as root if you are an experienced user, as it is possible to remove files or data which are required for the proper function of your Linux OS.

## Dependency Check

The Installer will now check for package dependencies. This will take 3-4 minutes. Click *Next* to continue.

## Package Selection

The Yellow Dog Installer defaults to a pre-defined package set which includes a full-featured set of graphical applications for a wide variety of functions. These applications are listed on the following webpage:

[www.terrasoftsolutions.com/products/ydl/apps.shtml](http://www.terrasoftsolutions.com/products/ydl/apps.shtml)

This process will take roughly one hour, with an update for each package installed provided on-screen. Once up and running, additional packages may be installed using *yum* or the Package Management utility.

*Good time for a beverage break ...*

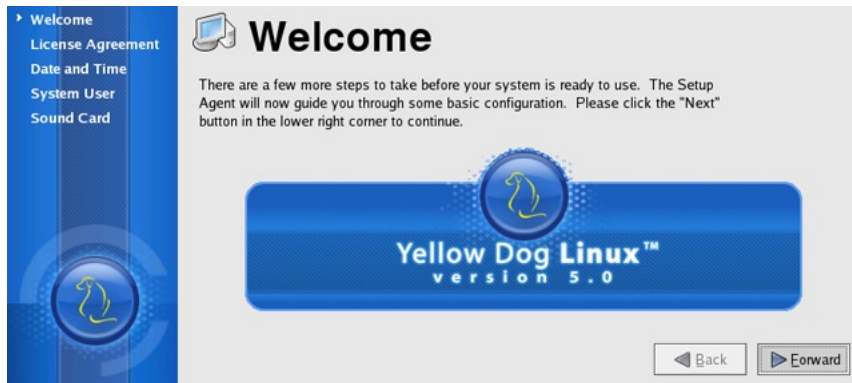
## BOOTING UP!

1. Click Reboot to restart your PS3. This will take a half minute.
2. When presented with the bootloader menu (the same as was presented prior to installation), TAB through the options and select *ydltext* if your monitor was not supported during installation\*; or press ENTER on your USB keyboard to boot the default *ydl* option.
3. Two YDL icons will appear in the upper left corner of your screen. These represent the PowerPC processor present on the PPU (Primary Processing Units) of the PS3 Cell CPU. Shortly thereafter, 6 smaller penguins will appear, each representing one of the SPU's (Synergistic Processing Units). There are 8 in all, 6 of which are available to Linux on the PS3.
4. During the first-ever boot following installation, you will be welcomed by *firstboot* in order that you may conduct additional system tests and configuration. *See the next section for details.*

\* [www.terrasoftsolutions.com/support/solutions/ydl\\_5.0/](http://www.terrasoftsolutions.com/support/solutions/ydl_5.0/) for assistance.

## FIRSTBOOT

Firstboot walks you through Acceptance of the License Agreement, Date and Time settings, System User, and Sound Card.



*License Agreement* - Please read and accept this document.

*Date and Time* - If your PS3 will always be connected to the internet, selecting NTP will make certain your clock is accurate. If not, manually set the Date and Time.

*System User* - Create one user account for your initial login and immediate access to the system. Additional users may be added later. Choose a password that is at least 8 characters, both letters and numbers and is not based on a dictionary word. Do not use your birthday, your child's name spelled backward, nor the name of your spouse followed by the year you were married. *The security of your computer is only as strong as your passwords.*

*Sound Setup* - Press the play button and confirm that music was heard.

## RUNNING YELLOW DOG LINUX

### Login

At the graphical prompt, enter the username and password created during firstboot's *System User* query. You will then enter the graphical user interface to Yellow Dog Linux, featuring the Enlightenment "E17" desktop environment.

With Linux, no one desktop environment is locked to the operating system, granting end users room for creativity, choice, and a variety of features. Other desktop environments such as KDE and Gnome are available with the YDL Install DVD or from on-line repositories. KDE offers a tightly integrated productive environment for office and education. Gnome generally caters to those who desire greater room for customization. Gnome is installed by default and may be selected at log in.

Yellow Dog Linux defaults to the Enlightenment "E17" desktop environment.

### Enlightenment

Enlightenment "E17" is an alternative desktop manager to KDE and Gnome, offering a completely customizable interface, integrated functionality, access to all the traditional applications, and a lightweight, intuitive, yet robust graphical interface.

While unique in many respects, E17 offers familiar operating system features such as a *start* (YDL logo) menu, productivity applications, and the ability to customize the desktop environment to your liking.

To learn more about Yellow Dog Linux and the E17 desktop environment, review the included Quick Start Tutorial, presented as the home page of your Firefox web browser:

YDL Menu ==> Applications ==> Internet ==> Firefox

The same tutorial is also available on-line:

[www.terrasoftsolutions.com/support/configuration/](http://www.terrasoftsolutions.com/support/configuration/)

## SUPPORT

### Installation Support

Installation Support is provided through YDL.net Enhanced accounts. To purchase a YDL.net Enhanced account, visit:

[www.terrasoftsolutions.com/store/](http://www.terrasoftsolutions.com/store/)

... and select the "Yellow Dog Linux" icon. Once purchased, you may proceed to [www.ydl.net](http://www.ydl.net) create your new YDL.net Enhanced account. Once logged in, follow the Help links to Support on the left side bar.

### HOWTOs, Lists, and Forums

A guide to free, on-line support is available at Terra Soft's website:

[www.terrasoftsolutions.com/support/](http://www.terrasoftsolutions.com/support/)

### Technical Support

To learn more about Terra Soft's technical support offerings, visit:

[www.terrasoftsolutions.com/services/](http://www.terrasoftsolutions.com/services/)